NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management

Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: RSA 482-A/ Env-Wt 100-900

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact) ☐ Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:

If mitigation is required a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the Determine if Mitigation is Required Frequently Asked Question.

Mitigation Pre-Application Meeting Date: Month: __ Day: __ Year: ____

☒ N/A - Mitigation is not required

3. PROJECT LOCATION:

Separate wetland permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: **NH Rte. 111/125 over Powwow River**			TOWN/CITY: **Kingston**
TAX MAP:	BLOCK:	LOT:	UNIT:
USGS TOPO MAP WATERBODY NAME: **Powwow River** ☐ NA		STREAM WATERSHED SIZE: **10.09** ☐ NA	
LOCATION COORDINATES (If known): **42`54'40.1"N 71`3'42.9"** ☒ Latitude/Longitude ☐			

4. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

To rehabilitate the existing pipe Kingston 099/106 carrying NH Route 11/125 over the Powwow River by placing a concrete invert and rip rap for bank stabilization immediately at the inlet and outlet of the structure.

5. SHORELINE FRONTAGE:

☒ NA This does not have shoreline frontage. SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the Land Resources Management Web Page.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Individual Sewerage Disposal per RSA 485-A:2	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Subdivision Approval Per RSA 485-A	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Shoreland Permit Per RSA 483-B	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED

7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB 18 - 0964 .

b. ☐ Designated River the project is in ¼ miles of: _____ ; and date a copy of the application was sent to the Local River Management Advisory Committee: Month: Day: Year:

☒ N/A

8. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: **Johnson, Steve, W**			
TRUST / COMPANY NAME: **NH Department of Transportation**	MAILING ADDRESS: **7 Hazen Drive**		
TOWN/CITY: **Concord**		STATE: **NH**	ZIP CODE: **03302**
EMAIL or FAX: **Steve.Johnson@dot.nh.gov**	PHONE: **603-271-3667**		
ELECTRONIC COMMUNICATION: By initialing here: SWJ, I hereby authorize NHDES to communicate all matters relative to this application electronically			

9. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.: **N/A**			
TRUST / COMPANY NAME:	MAILING ADDRESS:		
TOWN/CITY:		STATE:	ZIP CODE:
EMAIL or FAX:	PHONE:		
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically			

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.: **Locker, Douglas, B**	COMPANY NAME: **NH Department of Transportation**		
MAILING ADDRESS: **7 Hazen Drive**			
TOWN/CITY: **Concord**		STATE: **NH**	ZIP CODE: **03302**
EMAIL or FAX: **Douglas.Locker@dot.nh.gov**	PHONE: **603-271-3667**		
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically			

11. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not

Property Owner Signature	Steve W Johson Print name legibly	3/26/18 Date

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

⇨	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

⇨ Town/City Clerk Signature	Print name legibly	Town/City	Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

14. IMPACT AREA:
For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact
Permanent: impacts that will remain after the project is complete.
Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland		☐ ATF		☐ ATF
Scrub-shrub wetland		☐ ATF		☐ ATF
Emergent wetland		☐ ATF		☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream		☐ ATF		☐ ATF
Perennial Stream / River	1082 / 84	☐ ATF	1311 / 43	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent stream	/	☐ ATF	/	☐ ATF
Bank - Perennial stream / River	44 / 14	☐ ATF	1005 / 103	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
TOTAL	1126 / 98		2316 / 146	

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of $ 200
☐ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking) **3442** sq. ft. X $0.20 = **$ 688.40**

Temporary (seasonal) docking structure: _____ sq. ft. X $1.00 = $ _____

Permanent docking structure: _____ sq. ft. X $2.00 = $ _____

Projects proposing shoreline structures (including docks) add $200 = $ _____

Total = **$ 688.40**

The Application Fee is the above calculated Total or $200, whichever is greater = **$ 688.40**


N
Kingston 099/106
Great Pond
Country Pond
Copyright © 2013 National Geographic Society, i-cubed
0 0.2 0.4 0.8 1.2 1.6
Miles

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

WETLANDS PERMIT APPLICATION – ATTACHMENT A
MINOR AND MAJOR - 20 QUESTIONS

Land Resources Management
Wetlands Bureau

Check the Status of your application: www.des.nh.gov/onestop

RSA/ Rule: RSA 482-A, Env-Wt 100-900

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

The existing metal arch pipe has deteriorated. The current condition of the pipe shows substantial rust within the pipe. It is necessary to impact jurisdictional areas to provide for the repairs. The impacts are for the temporary construction areas, the concrete invert within the pipe, and rip rap at the inlet and outlet. If the structure is not rehabilitated, it will eventually be load posted or closed.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

The alternatives considered are as follows:

Replace structure with a new structure in compliance with the NH Stream Crossing Guidelines: According to the Stream Crossing Guidelines, if a new structure were to be constructed at this location it would require a span of 48'-0. A structure of this size would cost approximately $1,000,000. Spending this much money on a structure that could be adequately preserved for approximately $175,000 would not be a practicable use of resources.

Install Concrete Invert: This is the proposed alternative because it is the most cost effective way to repair a rusted metal pipe bridge. The additional impacts associated with this method are minimal. The project as proposed has an estimated cost of $175,000. This is the most cost-effective solution and also proposes the least amount of wetland impacts.

In the November 16, 2016 Natural Resource Agency Coordination Meeting no concerns with this project were raised.

3. The type and classification of the wetlands involved.

R2UB12: Riverine, lower perennial, unconsolidated bottom, cobble gravel and sand

Bank

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

The Powwow River flows into the Powwow Pond.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

The Powwow River has not been identified as a rare surface water of the state.

6. The surface area of the wetlands that will be impacted.

2393 sq. ft. Riverine (1082 sq. ft. permanent, 1311 sq. ft. temporary)

1049 sq. ft. Bank (44 sq. ft. permanent, 1005 sq. ft. temporary)

7. The impact on plants, fish and wildlife including, but not limited to:
   a. Rare, special concern species;
   b. State and federally listed threatened and endangered species;
   c. Species at the extremities of their ranges;
   d. Migratory fish and wildlife;
   e. Exemplary natural communities identified by the DRED-NHB; and
   f. Vernal pools.

a) The Natural Heritage Bureau identified one special concern species close to the project limits. The Eastern Pond Mussel is present within Great Pond. The proposed project will not effect the area where the Eastern Pond Mussel is found.

b) Through the U.S. Fish & Wildlife Service the Northern Long-eared Bat was identfied as being present in the area. The proposed work will remove a few trees greater than 3" diameter at breast height between October and April. The Natural Heritage Bureau also identified the Northern Blazing Star along the roadside west of the project. This project will not stage any construction vehicles there, and will leave the area undisturbed.

c) There are no species known to be at the extremities of their ranges located in the project area.

d) Migratory fish and wildlife will not be affected by this project.

e) The Department has coordinated with DRED and results of the NHB review revealed there was a record but it will not be expected to be impacted.

f) There were no vernal pools identified and/or delineated in the project area.

8. The impact of the proposed project on public commerce, navigation and recreation.

During construction all lanes of traffic will be maintained at all times. The existing structure is non-conducive to boaters. There are no recreational areas that have been identified in this area except for the possibility for fishing. During construction fishing activities from the banks of the Powwow River will need to occur outside of the construction work zone. When construction is completed, the project as proposed will be a benefit to the public commerce.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The project will not significantly interfere with the aesthetic interests of the general public. The proposed improvements will be more pleasing to the eye than the structure in poor condition.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will not interfere with or obstruct public rights of passage or access. During construction, traffic will be maintained at all times.

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

The project is expected to have a positive impact on abutting properties. The rehabilitated structure will better serve the abutting properties if they need to travel the road.

The project as proposed will not alter the chance of flooding on abutting properties.

12. The benefit of a project to the health, safety, and well being of the general public.

The project will provide a safer, longer lasting structure and roadway. If the structure is not rehabilitated, the bridge will eventually be load posted or closed. Keeping the roadway open benefits commerce, trade, emergency access, etc., for the general public.

13. The impact of a proposed project on quantity or quality of surface and groundwater. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

The surface water currently runs off the road, over natural vegetation. Upon completion of the project, surface water will drain in the same manner. This will have no adverse effects on the quality or quantity of surface and ground water. Best Management Practices will be used to prevent any adverse effect to water quality during construction.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

Flooding: While the culvert is located in a mapped flood plain, the water levels are controlled by backwater from Powwow Pond, and the invert will not increase upstream flood levels.

Erosion: Placing a concrete invert will not have any effect on erosion.

Sedimentation: The proposed project will not be a barrier to sediment transport.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

Surface water will not be reflected or redirected as a result of this project. The Powwow River does not have enough water for wave energy to be an issue.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

The work consists of the repair of an existing bridge structure. There are no similar structures in the vicinity owned by other parties that would require repair.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

This project has minimized overall impacts and will not impact the values and functions of the Powwow River at the site.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

The project is not located in or near any Natural Landmarks listed on the National Register.

19. The impact upon the value of areas named in acts of Congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

The proposed project will not impact any of the designated area values.

20. The degree to which a project redirects water from one watershed to another.

The project as proposed will not redirect water from on watershed to another.

Additional comments

Kingston 41222, (Non-Federal)
Tony Weatherbee provided an overview of the project. The project scope is to rehabilitate the bridge that carries Rte. 111, Rte. 125 over Powwow River (099/106). The existing structure is a metal pipe culvert bridge that has a span of 12'-0". Proposed work consists of the following: place sandbag cofferdams, install invert, place cutoff wall and place riprap.

Carol Henderson asked what something was in front of the pipe in one of the pictures. Matt Urban said that it was a beaver trap.

M. Urban said that the water here was a few feet deep and appeared to be stagnant. C. Henderson said that there was a boat launch nearby.

Lori Sommer asked what kind of invert would be installed and how high it would come up. Tony said that a 6 inch concrete invert would be installed and the invert walls will act a shelf for small critters to walk on. John Magee asked if critters would be able to get on the shelf. Tony said yes because it will tie into the bank.

L. Sommer asked if riprap would be installed inside the structure. Tony said no.

A.Lamb stated that the NHB review (NHB16-3408) had not yet been processed, but that there is a rare plant west of the project area along the roadside and in a powerline ROW. As long as vehicles aren't staged here, it should be fine.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Swanzey 41223, (Non-Federal)
Tony Weatherbee provided an overview of the project. The project scope is to rehabilitate the bridge that carries Rte. 12 over Troy Brook (166/171). The existing structure is a duel metal pipe culvert bridge that has two spans of 11-0" each, and a total length of 27'-4". The length through the structure is 78'-0". Proposed work consists of the following: place sandbag cofferdams, place concrete invert, place cutoff walls, place a fish weir if necessary and place riprap.

Lori Sommer noted that it would be nice to have the tier on the AIR form. Tony said that it is a tier 3 crossing.

Rick asked if DHR has looked at this project yet due to the masonry wall. Matt Urban said that once the application has been received by the Bureau of Environment, it will get reviewed by their cultural resource group and sent to DHR, if necessary.

Gino Infascelli asked for further description on the span length and structure length. Tony explained the dimension rules for when two pipes are located next to each other.

C. Henderson asked about NHB hits and Amy Lamb said that there was a hit to the west of the project but there were no hits located within the project area.

MITIGATION REPORT

The project consists of maintenance of an existing structure; therefore, mitigation is not required. At the November 16th,2016 Natural Resource Agency Coordination Meeting, no mitigation was discussed.

New Hampshire Department of Transportation
Bureau of Bridge Maintenance
River

Project # 41222, Bridge # 099/106
Kingston, NH - Rte. 111, Rte. 125 over Powwow

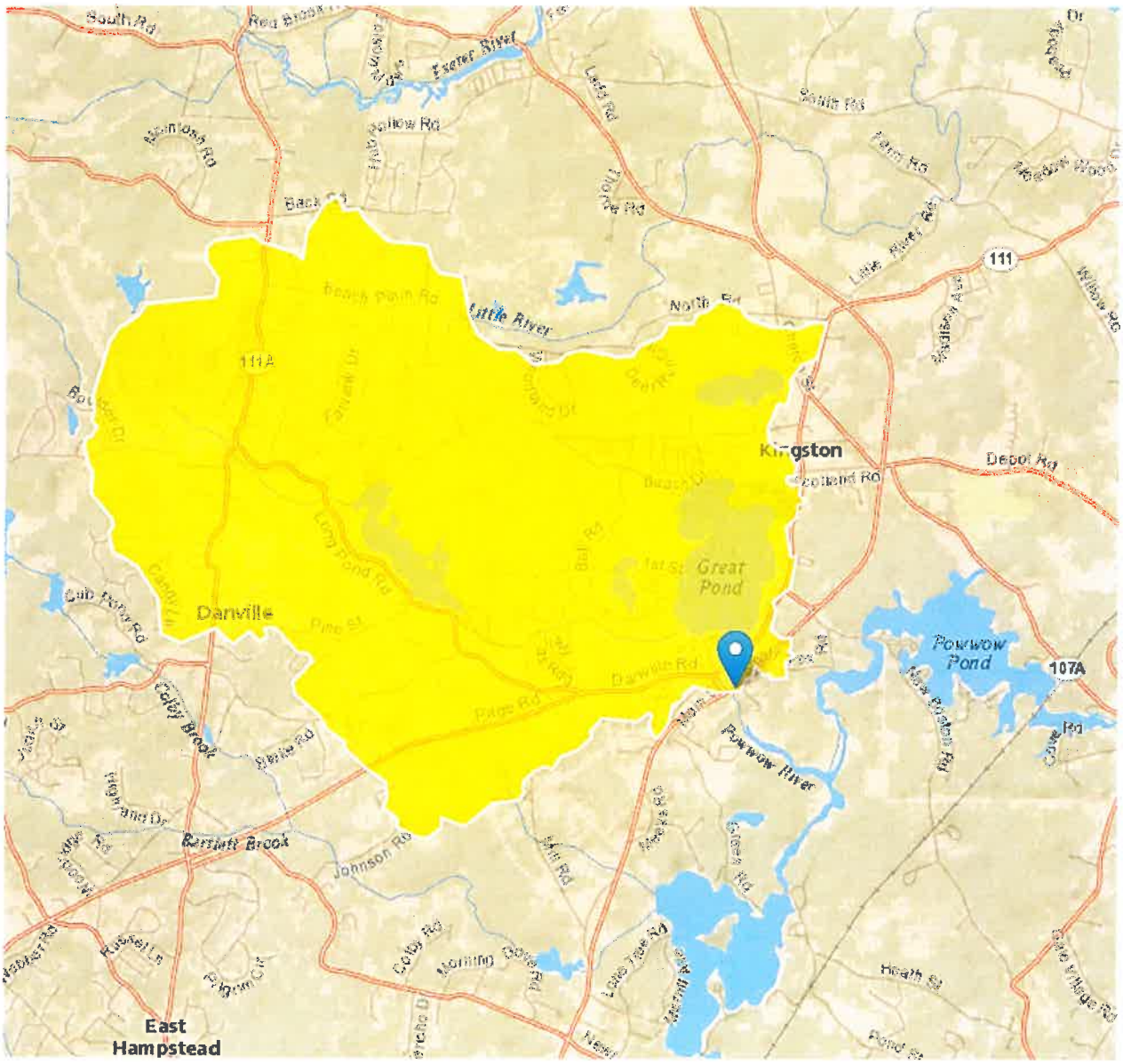
Hydraulic Data

Drainage Area – 10.09 square miles

Flow – Q 100 = 458 cfs

The proposed structure will pass the 100 year flood.

Watershed Boundaries Map



NH Department of Transportation
Bureau of Bridge Maintenance
Project, #41222
Env-Wt 904.09 Alternative Design
TECHNICAL REPORT

Env-Wt 904.09(a) - If the applicant believes that installing the structure specified in the applicable rule is not practicable, the applicant may propose an alternative design in accordance with this section.

Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as *available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.)*

Powwow River has a drainage area of 10.09 square miles which qualifies this stream as a Tier 3 crossing. The required span based on NH Stream Crossing Guidelines for a new crossing is 48'-0. A structure of this size would cost approximately $1,000,000. Spending this much money on a structure that could be adequately preserved for approximately $175,000 with much smaller impacts would not be a practicable use of resources.

The proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the *maximum extent practicable*, as specified below.

Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings – New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed:

(a) In accordance with the NH Stream Crossing Guidelines.

The proposed improvements have been developed in accordance with the NH Stream Crossing Guidelines. The Department has considered numerous design alternatives based on general considerations that take the geomorphic conditions of the stream into account as it relates to the structure. The Department has collected data in the field and in the office to aid in the design of the proposed crossing. Using information that was available the Department has determined that a full bridge replacement would not be practicable. As such, the Department has proposed an alternative design that meets the intent of the stream crossing guidelines to maximum extent practicable.

(b) With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing.

The proposed project will not significantly change the existing waterway opening and structure alignment, and therefore, it will not change the depths or velocities at the crossing. In order to be comparable to the natural upstream and downstream characteristics the crossing would need to have been 48'-0 span. The proposed alternative, although not an upgrade, does not diminish the existing conditions at the crossing.

(c) To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage.

The banks on both sides of the Powwow River are currently vegetated. Although there are temporary impacts in those areas the vegetation and existing conditions are not expected to be changed permanently.

(d) To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the functioning of the natural floodplain.

The proposed project will not significantly change the existing waterway opening and structure alignment, and therefore the current alignment and gradient of the stream channel will not change as a result of this project.

(e) To accommodate the 100-year frequency flood, to ensure that (1) there is no increase in flood stages on abutting properties; and (2) flow and sediment transport characteristics will not be affected in a manner which could adversely affect channel stability.

Flow data taken from the New Hampshire Streamstats was input into Federal Highway Authority HY-8. Flood Insurance Studies were also used as reference for the proposed project. Analysis was done on the existing structure and the proposed structure with the concrete invert and it was determined that the structure will still adequately accommodate the 100-year flood. Abutting property owners will not see an increase in flooding since the structure will not compromise the channel's stability. The proposed design will continue to accommodate sediment through the crossing.

(f) To simulate a natural stream channel.

The project does not propose to simulate natural streambed materials. The structure is a closed bottom and will remain closed bottom through the installation of the concrete invert.

(g) So as not to alter sediment transport competence.

The proposed project will not impact the crossing ability to completely transport sediment.

Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:

Env-Wt 904.01
(a) Not be a barrier to sediment transport;

There will be no barriers to sediment transport as a result of the structure modification. The crossing is completely transporting sediment and the proposed repairs will not alter the crossing's ability to continue to function. The crossing will maintain the existing opening and therefore is anticipated to continue to pass everything it is currently passing.

(b) Prevent the restriction of high flows and maintain existing low flows;

The proposed crossing will maintain the existing waterway capacity. High flows and low flows will not be changed as a result of this project.

(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction;

Aquatic life indigenous to the water body will not be obstructed or otherwise disrupted as a result of this project. The stream will also maintain its ability to successfully maintain adequate fish passage. During low flows small mammal species such as raccoons are expected to be able to utilize the crossing as a means of crossing the road.

(d) Not cause an increase in the frequency of flooding or overtopping of banks;

The proposed project will not increase the frequency of flooding or overtopping banks. The project will maintain the existing waterway opening. This crossing is will accommodate 100yr flood events without an increase in water levels upstream.

(e) Preserve watercourse connectivity where it currently exists;

Watercourse connectivity will be unchanged as a result of this project.

(f) Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both;

Watercourse connectivity will be unchanged as a result of this project.

(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing; and

The intent of the proposed project will not cause erosion, aggradation or scouring upstream or downstream of the crossing. Appropriate BMP's will be in place to ensure that the construction site is stable at all times.

(h) Not cause water quality degradation.

The proposed project will not cause water quality degradation. The project will utilize appropriate BMP's throughout construction to ensure that the construction site is stable at all times.

***Note: An alternative design for Tier 1 stream crossings must meet the general design criteria (Env-Wt 904.01) only to the *maximum extent practicable*.**

Memo

NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

To: Douglas Locker, New Hampshire Department of Transportation
7 Hazen Drive
Concord, NH 03302

From: Amy Lamb, NH Natural Heritage Bureau
Date: 3/27/2018 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB18-0964 Town: Kingston Location: NH 111, NH 125 over Powwow River
Description: To rehabilitate the existing pipe Kingston 099/106 carrying 099/106 over Powwow River by placing a concrete invert and shoreline riprap
cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: NHB recommends avoiding the area where northern blazing star is mapped (west of project area) and not using this area for equipment or vehicle staging. We do not have concerns about the invert as long as it does not have a significant impact on hydrology. Please contact the NH Fish & Game Department to address wildlife concerns.

Invertebrate Species	State[1]	Federal	Notes
Eastern Pond Mussel (*Ligumia nasuta*)	SC	--	Contact the NH Fish & Game Dept (see below).

Natural Community	State[1]	Federal	Notes
Atlantic white cedar - yellow birch - pepperbush swamp*	--	--	Changes to the hydrology of the wetland are the greatest threat facing the cedar swamp. Damming which causes pooling for extended periods can flood and drown existing trees, and drainage that results in lower water levels can lead to invasion by other species that can out compete -- and eventually eliminate -- Atlantic white cedar trees. Increased nutrient input from stormwater runoff could also deleteriously impact this acidic, low-nutrient plant community.
Medium level fen system	--	--	Level fens are stagnant, and as such are characterized by low nutrient levels, relatively high acidity levels, and accumulations of peat. The primary threats to this community are changes to its hydrology (especially that which causes pooling), increased nutrient input from stormwater runoff, and sedimentation from nearby disturbance.

Plant species	State[1]	Federal	Notes

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

northern blazing star (*Liatris novae-angliae var. novae-angliae*)	E	--	Threats to this highly imperilled species are development activities that eliminate its habitat and invasion of its open, grassy habitat by trees and shrubs.

Vertebrate species	**State**[1]	**Federal**	**Notes**
Spotted Turtle (*Clemmys guttata*)	T	--	Contact the NH Fish & Game Dept (see below)

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

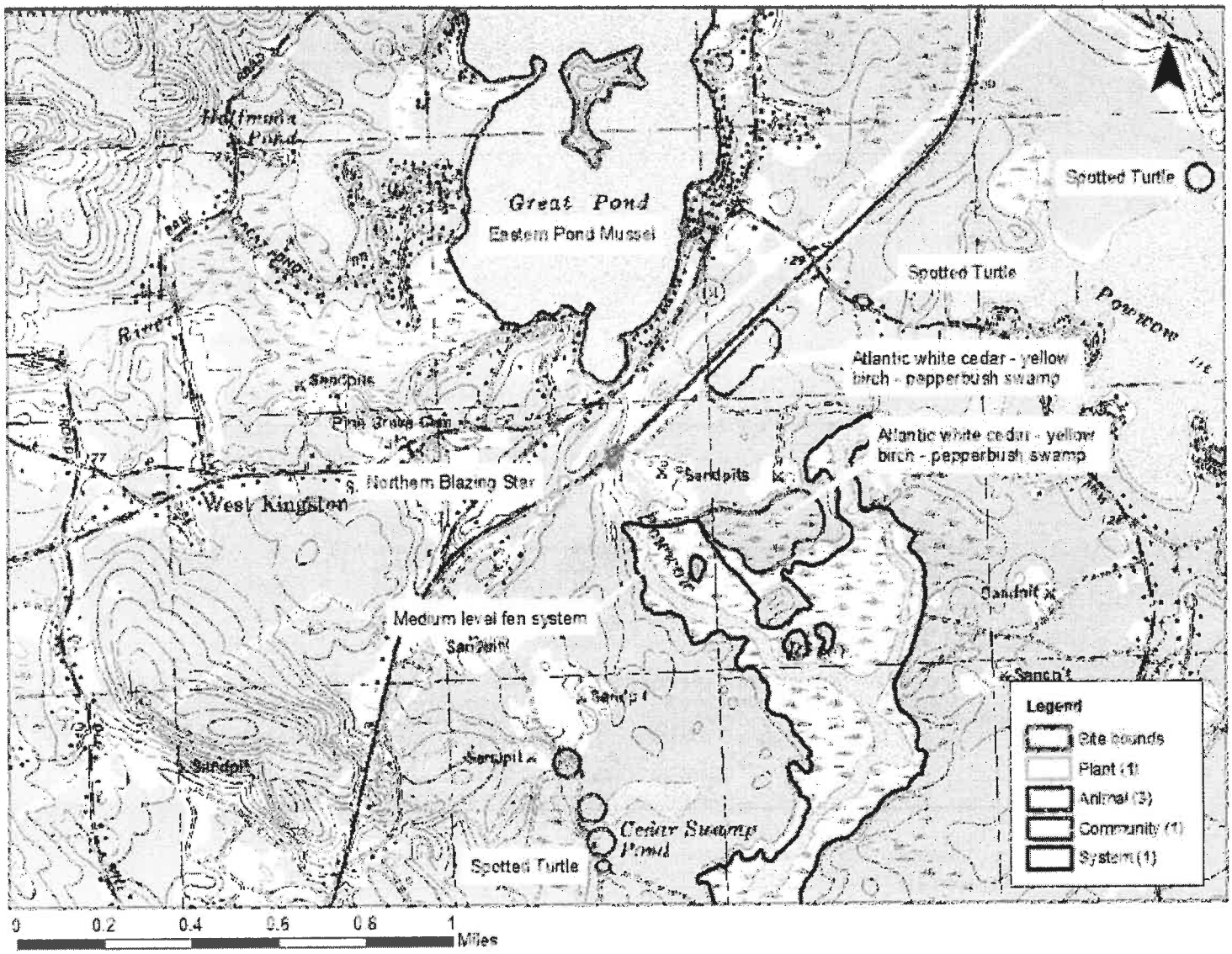
Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

NHB18-0964


Great Pond
Eastern Pond Mussel
Spotted Turtle
Spotted Turtle
Atlantic white cedar - yellow birch - pepperbush swamp
Atlantic white cedar - yellow birch - pepperbush swamp
Northern Blazing Star
West Kingston
Sandpits
Medium level fen system
Cedar Swamp Pond
Spotted Turtle
Legend
Site bounds
Plant (1)
Animal (3)
Community (1)
System (1)
0 0.2 0.4 0.6 0.8 1
Miles

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Pond Mussel (*Ligumia nasuta*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Special Concern	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank:	Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank:	Only a small area appeared to contain suitable habitat.
Detailed Description:	2010: Site 1: 2 mussels observed in deep plot, none in shallow plot. Site 2: 7 mussels observed in deep plot, 1 in shallow plot. Site 3: 1 mussel observed in deep plot, none in shallow plot. Site 5: 6 mussels observed in deep plot, 2 in shallow plot.1992: only 1 live specimen found, on southwestern shore, 1 dead in ca. 2 hours searching. 1964: Johnson specimen of 6 valves at MCZ.
General Area:	2010: Site 1: Sand and muck substrate. Sites 2 and 3: Sand, silt, and muck substrate. Site 5: Sand and gravel substrate.1992: Great Pond is a mid-sized lake bordered on its south shore by residential/commercial development. The northern end and central large island are largely undeveloped. Relatively fine, sandy substrate at the south end on the shores of Lake side Restaurant and the YMCA camp. Given the abundance of sand here and at the boat ramp just to the east, in contrast to the cobble/gravel shores elsewhere, one wonders if the sand at the south end may be artificial.
General Comments:	
Management Comments:	

Location

Survey Site Name:	Great Pond		
Managed By:	Kingston State Park		
County:	Rockingham		
Town(s):	Kingston		
Size:	269.0 acres	Elevation:	119 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1992: "Pond" and "Great Pond". South end and southwest shores were searched. Rte 111 in Kingston to Great Pond boat access ramp/swimming area at south end of pond, just east of "Lakeside Restaurant" at outlet stream.

Dates documented

First reported:	1964	Last reported:	2010-09-07

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Community Record

Atlantic white cedar - yellow birch - pepperbush swamp

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Not ranked (need more information)
State:	Not listed	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
Comments on Rank:

Detailed Description: 1994: Area 1: Larger patch is posted against trespassing and was delineated from photos and maps. Area 2: Narrow thicket of trees 25' tall in small patch along Route 125.
General Area:
General Comments: 1994: Area 1: Larger patch needs field work and landowner contact.
Management Comments: 1994: Area 2: Small patch may be susceptible to disturbance from Rte. 125 and windfall.

Location

Survey Site Name: Pow Wow River North
Managed By: Coon Tract

County: Rockingham
Town(s): Kingston
Size: 27.6 acres Elevation: 125 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Take Route 125 north towards Kingston. About 0.5 miles north of intersection with Route 111, turn right onto dirt road toward sandpit (if you come to Route 108 intersection, you have gone too far). Area 1: This larger patch is east of sandpit and north of open wetland. Area 2: This small patch is just east of Rte. 125.

Dates documented

First reported: 1993-03-09 Last reported: 1994-03-09

New Hampshire Natural Heritage Bureau - System Record

Medium level fen system

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 1998: Composed of sizable examples of ***highbush blueberry - sweet gale - meadowsweet shrub thicket*** (92 acres) and ***hairy-fruited sedge - sweet gale fen*** (51 acres).

General Area: 1998: The peatland communities are found adjacent to emergent marsh and aquatic communities that occur right along the river's edge. This section of the Powwow River is relatively undeveloped with only a few scattered homes and gravel pits near the river. Good examples of Atlantic white cedar swamp also occur in this landscape block defined by Rte. 125 to the northwest, New Boston Road to the northeast, the railroad track to the southeast, and the dirt access road heading southeast from Rte. 125 toward the railroad track.

General Comments: 1998: This site requires more field work to better understand its landuse history and community composition, classification, delineation, and condition. The effects of hydrologic alteration resulting from human-built dams on the formation, maintenance, and/or long-term viability of the peatland complex needs to be considered. An additional 50 acres adjacent to the peatland in this area are emergent marsh, aquatic bed, and river (total area is 192.9 acres).

Management Comments:

Location

Survey Site Name: Powwow River
Managed By: Webster Wildlife + Natural Area

County: Rockingham
Town(s): Kingston
Size: 193.2 acres Elevation: 120 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Park at the trailhead lot in the gravel pit northwest of Cedar Swamp Pond. Trailhead sign at forest edge marks the beginning of the trail. The trailhead is only 20 meters from the main access road (dirt). Parking area/trail head is 0.6 miles down the main access road from Rte. 125. Main access road runs in a north-south direction along the west side of Cedar Swamp Pond.

Dates documented

First reported: 1998-07-28 Last reported: 1998-09-16

New Hampshire Natural Heritage Bureau - Plant Record

northern blazing star (*Liatris novae-angliae var. novae-angliae*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Rare or uncommon
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank: A large population for NH.

Detailed Description: 2004: 41 plants counted. Flowering rate is high (40% in flower, 10% in immature fruit). Population appears to be thriving. Plants on north side of highway are more vigorous than those on the south. 2003: Ca. 20 scattered plants observed, ca. 6 flowering.

General Area: 2004: Powerline corridor and highway margin. Dominant associated species include *Lotus corniculatus* (birdsfoot-trefoil), *Ionactis [Aster] linariifolius* (stiff-leaved aster), *Schizachyrium scoparium* (little bluestem), and *Carex pensylvanica / lucorum* (Pennsylvanian / distant sedge). 2003: Mowed area under powerline. Dry sandy/gravel on a SE-facing slope. Growing with *Quercus velutina* (black oak), *Pinus strobus* (white pine), *Comptonia peregrina* (sweet fern), *Vaccinium angustifolium* (lowbush blueberry), *Rumex acetosella* (red sorrel), and *Rubus pensilvanicus* (Pennsylvania dewberry).

General Comments: 2004: All suitable habitat in the immediate area was searched.

Management Comments: 2004: Area kept clear by maintenance crews. Some ATV use. Recommend keeping competing vegetation cut low (controlled burn?).

Location

Survey Site Name: Powwow River, west of
Managed By:

County: Rockingham
Town(s): Kingston
Size: 1.7 acres
Elevation: 140 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Under powerlines on both sides of Rte. 125, ca. 200 feet SW of the intersection with Rte. 111 (a relatively recent intersection, not yet on topo map). Three distinct areas of population concentration.

Dates documented

First reported: 2003-08-30
Last reported: 2004-09-10

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank:	Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank:	
Detailed Description:	2015: Area 14007: 1 adult observed, sex unknown. 2014: Area 13641M: 1 adult observed, sex unknown, on 6/7. 1 adult observed, sex unknown, on 8/24. Area 13680: 1 adult observed, sex unknown. 2012: Area 12739M: 1 adult and 2 juveniles observed. 2011: Area 12739M: 1 adult observed. Area 13103: 1 adult observed. 2010: Area 12739M: 1 adult observed. 1991: Area 6601: Seen.
General Area:	2014: Area 13641M: Forested wetland. Area 13680: Shrub wetland. 2011: Area 12739M: Cedar swamp and brushy marsh. Area 13103: Dirt road adjacent to stream. 1991: Area 6601: Pond.
General Comments:	1991: Area 6601: Student told James Taylor.
Management Comments:	

Location

Survey Site Name:	Country Pond		
Managed By:	Webster Wildlife + Natural Area		
County:	Rockingham		
Town(s):	Kingston		
Size:	9.7 acres	Elevation:	

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13641M: Webster Wildlife and Natural Area. Area 13680: [Heath Street, Newton, near B&M railroad].
2011: Area 13103: [Green Road north of Cedar Swamp Pond].
2010: Area 12739M: Webster Wildlife and Natural Area.
1991: Area 6601: Ridge Road near Country Pond.

Dates documented

First reported:	1991	Last reported:	2015-04-14

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2014: Area 13635: 1 adult observed, sex unknown. Area 14141: 1 adult observed, sex unknown.
General Area: 2014: Area 13635: Lake/pond. Area 14141: Roadside, with wet woods on either side of road.
General Comments:
Management Comments:

Location

Survey Site Name: Powwwow Pond
Managed By: Powwow Pond CE - Bakie

County: Rockingham
Town(s): Kingston
Size: 2.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13635: Powwow Pond, Kingston. Area 14141: Intersection of New Boston and Small Pox Roads, Kingston.

Dates documented

First reported: 2014-05-01 Last reported: 2014-05-20

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

Urban, Matt

To: Tuttle, Kim
Subject: RE: NHB17-3466 (Kingston - NHDOT#41222)

From: Tuttle, Kim
Sent: Monday, November 20, 2017 10:28 AM
To: Urban, Matt
Cc: Large, Sarah; Magee, John
Subject: RE: NHB17-3466 (Kingston - NHDOT#41222)

Thanks, Matt.

NHB18-0964

The NHFG Nongame and Endangered Wildlife Program has reviewed NHB17-3466 for the proposed installation of a 6" concrete invert within the existing Corrugated Metal Arch Pipe (CMP) on NH Route 125/111 over the Powwow River (Bridge #099/106) in Kingston. The NHB database check identified the state threatened eastern pond mussel in the vicinity of the project. We do not expect impacts to eastern pond mussel or wildlife crossing opportunities as a result of the proposed invert project.

Please avoid the use of welded plastic or 'biodegradable plastic' netting or thread in erosion control matting at this project site. There are numerous documented cases of wildlife including the state threatened black racer, which is also present in Kingston, being trapped and killed in erosion control matting with synthetic netting and thread. Several 'wildlife friendly' options such as woven organic material (e.g., coco or jute matting) are commercially available if needed on this job. We have examples if you need them.

Regards,

Kim Tuttle
Wildlife Biologist
NH Fish and Game
11 Hazen Drive
Concord, NH 03301
603-271-6544

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2017-SLI-2850
Event Code: 05E1NE00-2017-E-06141
Project Name: Kingston 099/106

September 27, 2017

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2017-SLI-2850

Event Code: 05E1NE00-2017-E-06141

Project Name: Kingston 099/106

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Install concrete invert within an existing metal arch pipe.

Project Location:

Approximate location of the project can be viewed in Google Maps:
https://www.google.com/maps/place/42.91120115527305N71.06205426288085W

Counties: Rockingham, NH

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

There are no critical habitats within your project area under this office's jurisdiction.

Project___Kingston 41222_____

Wetland Application – NHDOT Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the enclosed Standard Dredge and Fill Application for potential impacts to historic properties.

Proposed Project: Installation of a concrete invert within an existing metal pipe (12 ft span) beneath RT 112/125 over the Powwow River(which flows into Powwow Pond) and shoreline riprap at inlet and outlet; and placing sandbag cofferdams

Above Ground Review

Known/approximate age of structure:
Kingston 099/106 1964 Corrugated Metal Arch Pipe bridge (segmental)

☒ No Potential to Cause Effect/No Concerns

Steel plate arches are a post-1945 Section 106 bridge type under the Program Comment.

☐ Concerns:

Below Ground Review

Recorded Archaeological site: ☐Yes ☒No

Nearest Recorded Archaeological Site Name & Number: 27-RK-0244 no name assigned
☒Pre-Contact ☐Post-Contact

Distance from Project Area:
714 feet (217meters) north of project area near junction of RT111 and Great Pond

Another Pre-Contact site lies in this vicinity 27-RK-246, immediately north of 27-RK-244

☐ No Potential to Cause Effect/No Concerns

☒ Concerns:
Although activities are minimal for installing this concrete invert within a 1964 metal arch pipe and the immediate surrounding area appears to consist of a disturbed fill prism, **I recommend no subsurface excavation on the banks to create an access or conduct other activities** as this area is sensitive for Pre-Contact Native American archaeological resources. Most likely Native populations were utilizing this region between the Powwow River, Great Pond, Country Pond and the Powwow River and the associated wetlands.

Reviewed by:

Joyce Charles

NHDOT Cultural Resources Staff

11/17/2017

Date:

US Army Corps of Engineers ®
New England District

U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		X
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org, specifically the book Natural Community Systems of New Hampshire.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres.		X
2.6 What is the size of the existing impervious surface area?	2359	
2.7 What is the size of the proposed impervious surface area?	2359	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	0%	
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)	X	
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	X	

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?**		X

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.
** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

Culvert Outlet

Downstream Channel

Culvert Inlet

Culvert Inlet (from above)

Culvert Inlet Bank

CONSTRUCTION SEQUENCE

1. Install temporary sandbag cofferdam in the brook, prepare sediment basin and divert flow through a bypass pipe or pumping through a bypass.
2. Dewater the work zone.
3. Place concrete invert.
4. Remove cofferdams and restore the site.

Note: The Project will utilize BMP's from the Best Management Practices manual during all phases of construction.

PART Env-Wt 404 CRITERIA FOR SHORELINE STABILIZATION

The rehabilitation of the bridge that carries U.S. Rte. 2 over Moose River proposes the placement of stone fill within areas under the jurisdiction of the NH Wetlands Bureau and the US Army Corps of Engineers. The stone fill will be located in the channel at the inlet and outlet of the culvert as shown on the plans.

Pursuant to PART Wt 404 Criteria for Shoreline Stabilization, the following addresses each codified section of the Administrative Rules:

Env-Wt 404.01 Least Intrusive Method.

The streambed stabilization treatment proposed is the least intrusive construction method necessary to minimize the disruption to the existing shorelines. The stone treatment can be reasonably constructed utilizing general highway construction methods.

Env-Wt 404.02 Diversion of Water.

Proposed roadway drainage will allow storm water run-off to be diverted so that it will flow over vegetated areas, insofar as possible, prior to entering Moose River. This will minimize erosion of the shoreline.

Env-Wt 404.03 Vegetative Stabilization.

Natural vegetation will be left undisturbed to the maximum extent possible. The only locations being disturbed are the impacted areas on the plan for construction. All newly developed slopes and disturbed areas will have hummus and seed applied for turf establishment, which will help stabilize the project area.

Env-Wt 404.04 Rip-rap.

(a) Stone fill, as proposed is shown on the attached plans to protect the channel as necessary. Stable embankments are necessary to maintain the structural integrity of the bridge during all flow conditions.

(b) (1-5) The minimum and maximum stone size, the gradation, cross sections of the stone fill, proposed location, and other details have been provided on the attached plans. Bedding for the stone will will consist of natural ground excavated to the proposed underside of the stone fill.

(b) (6) Enclosed are plan sheets to sufficiently indicate the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.

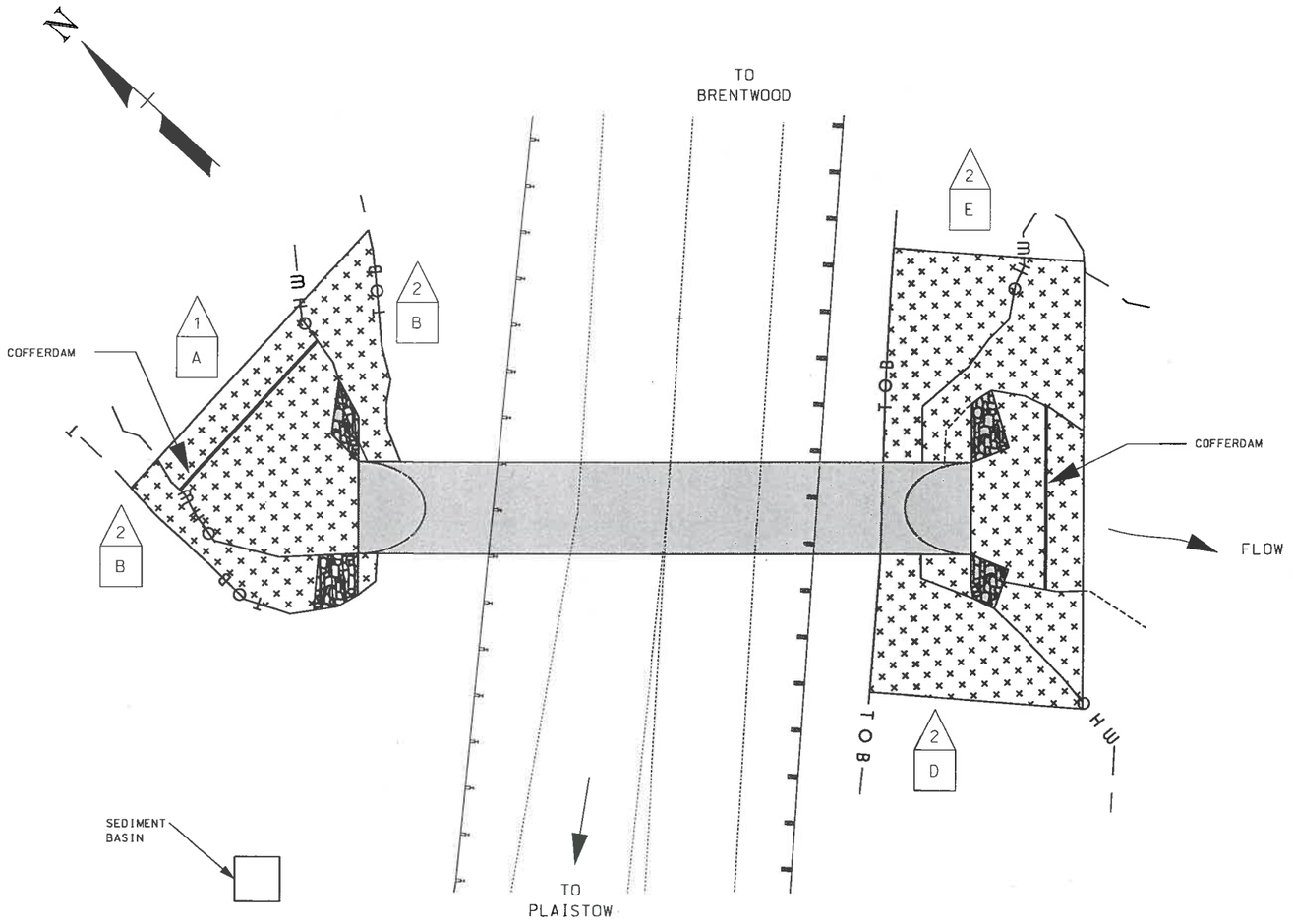
(b) (7) Stone fill is recommended for the limits shown on the attached plans to protect the streambed from erosion during flood flows and scour during all flows.

(c) This project is not located adjacent to a great pond or water body where the state holds fee simple ownership.

(d) Stone fill is proposed at the bottom of the streambed in order to adequately prevent undermining of the culvert.

(e) The enclosed plan has been stamped by a professional engineer.

RIPRAP GRADATION
D15 < 5"
D50 < 12"
D100 < 24"



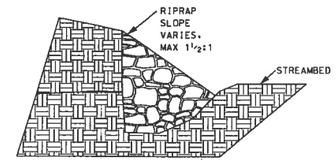
WETLAND IMPACTS
SCALE: 1" = 20'-0"

10 0 10 20
SCALE IN FEET

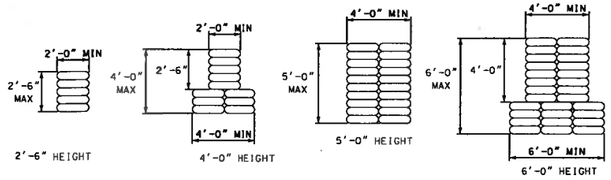
LEGEND

TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

WETLAND DESIGNATION NUMBER
WETLAND IMPACT LOCATION
WETLAND MITIGATION AREA
MITIGATION



SECTION A-A
NOT TO SCALE



COFFERDAM DETAILS
NOT TO SCALE

THE STATE OF NEW HAMPSHIRE
STEVE W. JOHNSON
No. 7395
LICENSED PROFESSIONAL ENGINEER
3/28/18

WETLANDS DELINEATED BY SARAH LARGE AND MATT URBAN OCTOBER 2016

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN KINGSTON BRIDGE NO. 099/106 STATE PROJECT 41222
LOCATION NH111, 125 OVER POWWOW RIVER

WETLAND IMPACTS

BRIDGE SHEET 1 OF 2

REVISIONS AFTER PROPOSAL	BY	DATE		BY	DATE
			DESIGNED		
			DRAWN DBL	9/26/17	CHECKED SWJ 10/5/17
			QUANTITIES		CHECKED
			ISSUE DATE		
			REV. DATE		

FILE NUMBER KINGSTON 099/106

SHEET SCALE	FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
AS NOTED	2018	06	1	2

Kingston 099/106

WETLAND IMPACT SUMMARY

WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION		
			PERMANENT				TEMPORARY		PERMANENT		
			N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL
			SF	LF	SF	LF	SF	LF	LF	LF	LF
1	R2UB12	A			1082	84	1311	43			
2	BANK	B	37	5			158	27			
2	BANK	C	7	9			192	12			
2	BANK	D					338	31			
2	BANK	E					317	33			
		F									
		G									
		H									
		I									
		J									
		K									
		L									
		TOTAL	44	14	1082	84	2316	146	0	0	0

PERMANENT IMPACTS: 1126 SF
TEMPORARY IMPACTS: 2316 SF

TOTAL IMPACTS: 3442 SF

SUBTOTALS		PERMANENT				TEMPORARY	
		N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)			
CLASS	DESCRIPTION	SF	LF	SF	LF	SF	LF
R2UB12	RIVERINE	0	0	1082	84	1311	43
BANK	BANK	44	14	0	0	1005	103
		0	0	0	0	0	0
		0	0	0	0	0	0
		0	0	0	0	0	0

WETLAND CLASSIFICATION CODES	
R2UB12	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, COBBLE GRAVEL
BANK	

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN KINGSTON BRIDGE NO. 099/106 STATE PROJECT
LOCATION NH111, 125 OVER POWWOW RIVER

WETLAND KEY AND SUMMARY

BRIDGE SHEET 2 OF 2

REVISIONS AFTER PROPOSAL

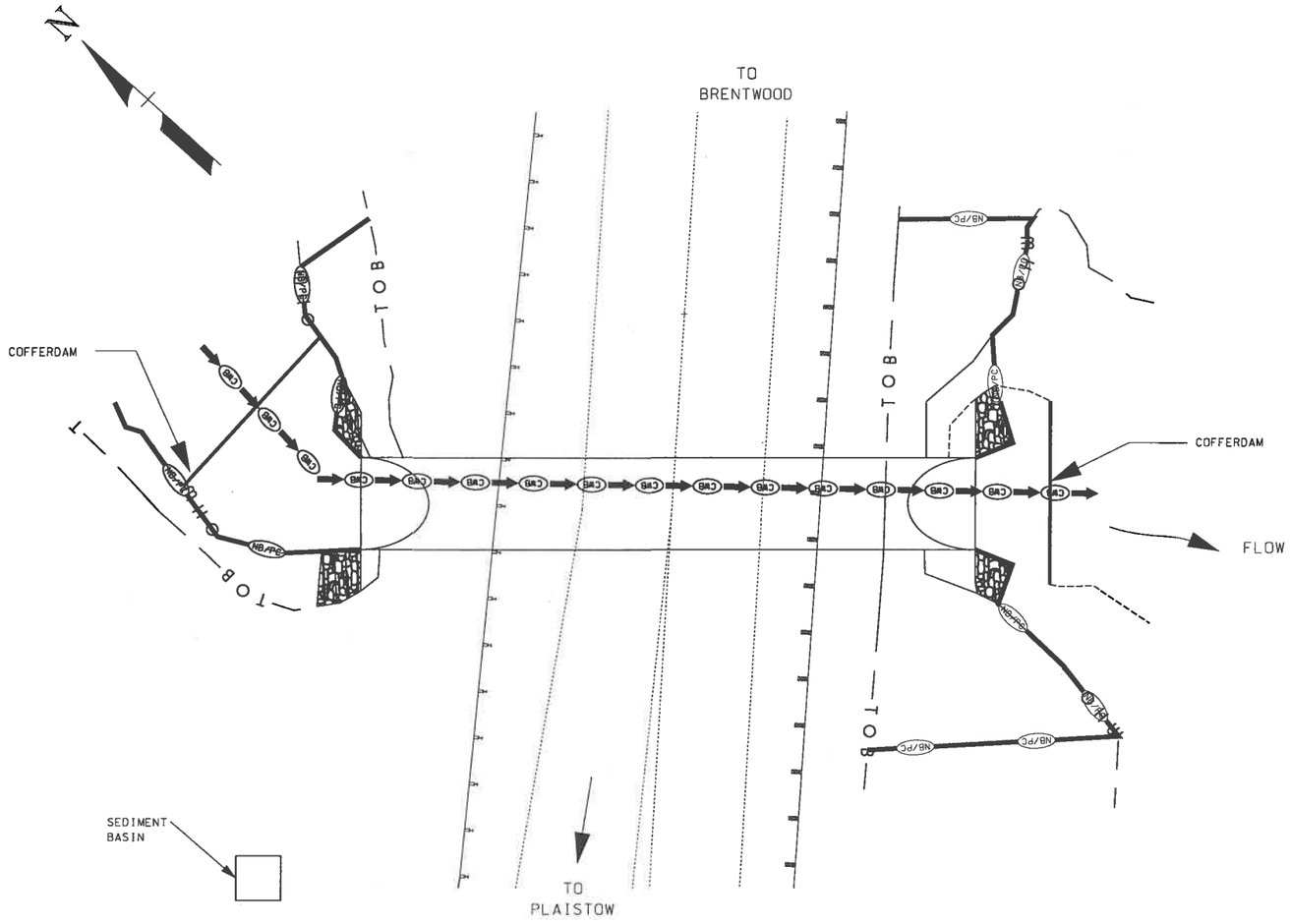
	BY	DATE		BY	DATE
DESIGNED			CHECKED		
DRAWN	DBL	9/26/17	CHECKED		
QUANTITIES			CHECKED		
ISSUE DATE					
REV. DATE					

FILE NUMBER DIXVILLE 182/070

SHEET SCALE: AS NOTED

FISCAL YEAR 2018 | CREW 06 | SHEET NO. 2 | TOTAL SHEETS 2

RIPRAP GRADATION
D15 < 5"
D50 < 12"
D100 < 24"



EROSION CONTROL PLAN LEGEND

- PC — PERIMETER CONTROL
  - SILT FENCE
  - EROSION CONTROL MIX BERM
  - EROSION CONTROL MIX SOX
  - TURBIDITY CURTAIN
  - SHEET PILE
  - COFFER DAM
- NB/PC — NATURAL BUFFER/PERIMETER CONTROL
  - SILT FENCE
  - EROSION CONTROL MIX BERM
  - EROSION CONTROL MIX SOX
  - TURBIDITY CURTAIN
  - SHEET PILE
  - COFFER DAM
- CP — CHANNEL PROTECTION
  - STONE CHECK DAMS
  - STRAW WATTLES
  - CHANNEL MATTING
  - CLASS D EROSION STONE
  - CLASS C STONE
- CWB — CLEAN WATER BYPASS
  - PUMP THROUGH PIPE
  - DRAIN THROUGH PIPE OR CHANNEL

WETLAND IMPACTS

SCALE: 1" = 20'-0"

10 0 10 20
SCALE IN FEET

WETLANDS DELINEATED BY SARAH LARGE AND MATT URBAN OCTOBER 2016

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN KINGSTON BRIDGE NO. 099/106 STATE PROJECT 41222
LOCATION NH111, 125 OVER POWWOW RIVER

EROSION CONTROL PLANS

BRIDGE SHEET 1 OF 2

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED			CHECKED		
	DRAWN	DBL	9/26/17	CHECKED	SWJ	10/5/17
	QUANTITIES			CHECKED		
	ISSUE DATE					
	REV. DATE					

FILE NUMBER KINGSTON 099/106

SHEET SCALE	FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
AS NOTED	2018	06	1	2